

Notes on some interesting Geometridae collected in Tuscany (Italy)

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Summary. Eleven species of Geometridae are listed. Among these, *Eupithecia orphnata* W. Petersen, 1909 is new for the Italian fauna and *Stegania cararia* (Hübner, 1790) is recorded for the first time from the Italian peninsula. Furthermore, six species are new for the fauna of Tuscany. For each species the presently known distribution in Italy is given.

Zusammenfassung. Elf Arten der Geometridae werden aufgelistet. Von diesen wird *Eupithecia orphnata* W. Petersen, 1909 erstmalig für die Fauna Italiens nachgewiesen. *Stegania cararia* (Hübner, 1790) erstmalig von der Apenninenhalbinsel. Weitere sechs Arten sind Neufunde für die Fauna der Toskana. Für jede Art wird die derzeit bekannte Verbreitung in Italien dargestellt.

Résumé. Onze espèces de Geometridae sont recensées. Parmi celles-ci, *Eupithecia orphnata* W. Petersen, 1909 est nouvelle pour la faune italienne et *Stegania cararia* (Hübner, 1790) est mentionnée pour la première fois de la péninsule italienne (déjà connue du Piémont). De plus, six espèces sont nouvelles pour la faune de Toscane. Pour chaque espèce, la répartition connue actuellement en Italie est présentée.

Key words: Lepidoptera, Geometridae, new records, Italy, Tuscany.

Tuscany is a region with a great diversity of environmental conditions and, consequently, a rich Lepidopteran fauna. Our present knowledge in this field is quite good, thanks to the efforts of many lepidopterists who carried out specific studies in this region during the last two centuries.

Nevertheless, the moth fauna in several areas of Tuscany still remains poorly known and, consequently, we have focused our attention on such areas.

The Apuan Alps is a mountainous chain that, despite its low elevation, has a cold alpine-like climate. This is evidenced by the presence of alpine species (e.g. *Erebia* spp.) that are absent in the Italian peninsula or limited to the higher altitudes in the central Apennines (Marche, Abruzzi, Lazio). The Farma Valley in the

“Colline Metallifere” (central Tuscany) is a well known refuge area. It is located in a warm Mediterranean region, but its peculiar geomorphology confers it meso-frigophilous characters. It is one of the two known localities of central Italy where *Archiearis notha* (Hübner, [1803]) is found (Fabiano & Zilli, 1998).

Our research in these areas, as well as in other interesting zones of Tuscany, led us to discover some rare or newly found Geometridae. This paper presents an annotated list of these species, among which *Eupithecia orphnata* W. Petersen, 1909 is also new for the Italian fauna.

Unless otherwise stated, the specimens have been collected by the authors and are being kept in their collection.

Chloroclysta miata (Linnaeus, 1758)

♂, Massa, Apuane Alps, Passo del Vestito, 1100 m, 9.X.1999.

Distribution in Italy: Trentino, Alto Adige, Veneto, Friuli (Wolfsberger, 1971), Emilia, Marche, Lazio, Abruzzi, Sardinia (Prola & Racheli, 1979; Raineri & Zangheri, 1995). — New for Tuscany.

Triphosia sabaudiata (Duponchel, 1830)

2♂, Lucca, Apuane Alps, Mount Matanna, 1050 m, 17.VII.1999.

Distribution in Italy: Piedmont, Lombardy, Trentino, Alto Adige, Veneto, Friuli, Emilia, Marche, Lazio, Abruzzi, Campania, Lucania (Parenzan, 1994). — Rare mountain species, occurring from 1000 to 2000 m and more. First record from Tuscany.

Solitanea mariae (Stauder, 1921)

2♂, Lucca, Apuane Alps, Fociomboli, 1230 m, 23.VII.1999; ♀, Siena, Farma Valley, Iesa, Carpineto, 200 m, 20.VIII.1999; ♂, ♀, Arezzo, Casentino, Moggiona, 700 m, 26.VI.1997, 4.VIII.1997; 2♂, Arezzo, Casentino, Camaldoli, 800–1000 m, 29.VII.1997, 23.IX.1997.

Distribution in Italy: Veneto, Liguria, Romagna, Tuscany, Umbria, Marche, Lazio, Campania, Lucania, Calabria (Parenzan, 1994). — Previous records of this species in Tuscany were scarce. It appears now to be well distributed in the region.

Eupithecia extraversaria Herrich-Schäffer, 1852

♂, Siena, Farma Valley, Iesa, Carpineto, 200 m, 13.VI.1997, F. Balderi leg. et coll.

Distribution in Italy: Trentino, Alto Adige, Veneto, Romagna, Marche, Lucania (Parenzan, 1994). — Scattered populations in the Alps. Extremely scarce in the Italian

peninsula where it appears to be confined to mountain areas between 1300 and 1400 m, except for a single female collected by P. Zangheri near Forlì (Fiumi & Camporesi, 1988). First record for Tuscany.

Eupithecia gueneata Mabilie, 1862

♂, Lucca, Apuane Alps, Mount Matanna, 1050 m, 17.VII.1999.

Distribution in Italy: Lombardy, Trentino, Alto Adige, Veneto, Emilia, Lazio, Lucania, Calabria, Sicily (Parenzan, 1994). — New for Tuscany.

Eupithecia inturbata (Hübner, [1817])

♂, 3 ♀, Siena, Farma Valley, Iesa, Carpineto, 200 m, 8.IX.1999, 2.X.1999.

Distribution in Italy: Alto Adige (Dannehl, 1927), Emilia, Abruzzi (Flamigni, Bastia & Dapporto, *in prep.*). — The first record of this very rare species from Tuscany.

Eupithecia orphnata W. Petersen, 1909

2 ♀, Lucca, Apuane Alps, Mount Matanna, 1050 m, 21.VI.1999, 17.VII.1999.

Distribution in Europe: Sweden, Finland, Poland, Czech Republic, Slovakia, Germany, France, Spain, Switzerland, Austria, Hungary, Romania, Bulgaria, Albania (Karsholt & Razowski, 1996). — This species, typical of cold climates, is new for the Italian fauna. Its presence in the Apuane Alps is noteworthy, as it evidences the importance of this mountain chain as a refuge area for the northern species who colonised the Italian peninsula during the glacial periods. Many specimens of *Eupithecia subumbrata* ([Denis & Schiffermüller], 1775) have been collected in the same locality and at the same time. *E. orphnata* and *E. subumbrata* are difficult to tell apart by their wing pattern, although the first is usually darker. Correct identification depends on examination of the genitalia (Figs 1–2). *E. subumbrata* has been recorded for the first time in the northern Apennines to Poggio della Doganaccia (Pistoia) (Flamigni, Bastia & Dapporto, *in prep.*).

Stegania cararia (Hübner, 1790)

5 ♂, ♀, Siena, Farma Valley, Iesa, Carpineto, 200 m, 6.V.1999, 27.V.1999, 14.VII.1999, 13.VIII.1999; ♂, Siena, Farma Valley, Iesa, Carpineto, 200 m, 13.VI.1997, F. Balderi leg. et coll.

Distribution in Italy: Piedmont (Mariani, 1941), Brenta Mountains, and few other localities in the Alps (Hellmann, 1987). — This is the first record of the species for the Italian peninsula (Figs 3–5). The presence of this species in the Farma Valley is a further confirmation of the refugial character of the site. Besides the above mentioned *Archiearis notha*, *Eupithecia extraversaria* and *Eupithecia inturbata*, other species typical of colder climates like *Cleorodes lichenarius* (Hufnagel, 1767), *Gluphisia crenata* (Esper, 1785), *Lamprotes c-aureum* (Knoch, 1781), *Catocala fraxini* (Linnaeus, 1758) and *Hyphoraia testudinaria* (Geoffroy, 1785) are found here.



Megalycinia serraria (A. Costa, 1881)

♀, Siena, Farma Valley, Bagni di Petriolo, 160 m, 20.IX.1998; 2♀, Arezzo, Casentino, Moggiona, 700 m, 18.IX.1995, 23.IX.1997.

Distribution in Italy: Emilia (Flamigni, 1990); Romagna, Tuscany, Marche, Umbria, Lazio, Abruzzi, Lucania, Calabria, Sicily (Parenzan, 1994). — This Italian endemic species has been recorded from about twenty localities of central and southern Italy. A single old record from Camaldoli (Arezzo) (Calberla, 1890) was known hitherto in Tuscany.

Cleorodes lichenarius (Hufnagel, 1767)

♂, Siena, Farma Valley, Bagni di Petriolo, 160 m, 20.IX.1998.

Distribution in Italy: Trentino, Piedmont, Lombardy, Romagna, Tuscany, Umbria, Lazio, Abruzzi, Apulia, Sicily, Sardinia (Parenzan, 1994), Friuli, Calabria (Parenzan *et al.*, 1998) Emilia (Flamigni, Bastia & Dapporto, *in prep.*). — This uncommon species is usually found in mountain habitats and is extremely rare at low altitudes. It had not been collected in Tuscany since the 19th century (Zeller, 1849; Calberla, 1890).

Yezognophos dilucidarius ([Denis & Schiffermüller], 1775)

2♂, Lucca, Apuane Alps, Campocattino, 10.VIII.1999.

Distribution in Italy: Trentino, Alto Adige, Veneto, Lombardy, Piedmont, Liguria (Wolfsberger, 1971). — An old record from Emilia appears to be doubtful and probably referable to *Yezognophos dognini* (Thierry-Mieg, 1910) (Flamigni, Bastia & Dapporto, *in prep.*). New for Tuscany.

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Figs 1–5. 1. *Eupithecia orphnata*, female genitalia, Apuane Alps; 2. *Eupithecia subumbrata*, female genitalia, Apuane Alps; 3. *Stegania cararia*, Farma Valley; 4. *Stegania cararia*, male genitalia, Farma Valley; 5. *Stegania cararia*, aedeagus, Farma Valley.

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